SPECIFICATIONS
Shallow-Draft, 25' Boat with Cabin to Support Estuarine Research

The Coastal Ecology Branch (CEB) of the US Environmental Protection Agency (EPA) seeks proposals and quotations for a boat that will be used to support scientific research in the Gulf of Mexico, estuaries and bays. The following sections describe the features and requirements for this boat. All items should be considered mandatory unless labeled "Optional".

1. The Vessel -
    Hull
    Decks
    Cabin
2. Outboard Motors
3. Trailer
4. Accessories
5. Documentation
6 Warranty
7. Delivery

The criteria for selecting the boat builder are 1) meeting the mandatory requirements of the vessel function and design (50% of evaluation), 2) evidence of satisfaction in the design, construction, durability, and performance of similar boats built for government or commercial purposes (such as for research or surveys) as provided by at least two previous customers whom EPA can contact (25% of evaluation), and 3) lowest price (25% of evaluation). Selection of proposal will be based on it meeting the specified technical requirements, and cost. The proposal package shall include its layout, a list and description of all items that would be included on the boat, documentation, warranty and delivery.

1. The Vessel - Requirements for Function and Design

The boat will support a wide variety of research activities in saltwater environments, including: towing scientific instruments (video, sonar, flying sleds, plankton nets, or small trawl nets) and deploying scientific gear vertically while on-station (water samplers, CTD and ADC meters, benthic grab samplers, etc.). The vessel shall be a trailerable work boat, 25' length, with a beam of 9' 6" or less, Fiberglass, Modified "V" hull with approximate 16 degree of deadrise, with flotation foam, and commercial grade hull with greater than1" hull thickness below the waterline. Forward enclosed cabin with lockable back door and companionway hatch, cabin size approximate (5' x 7' x 6"3"), Cockpit area 60 sq. ft. or larger, Ventilating windshield with wipers port and starboard, Vented windows on each side of pilot house, 2 swiveling, pedestal seats. Vessel painted Grey or White with US EPA lettering on each side and a blue diagonal stripe (size and location provided after award).

Hull:

- 25' length (bow to transom), 9'-6" beam width at deck level
- Vee or modified V bottom shape, 16° or less deadrise at the transom
- Capable of operating in 3' depth of water with a full load of fuel, 4 people onboard and 800 pounds of scientific equipment on deck
- All materials and construction shall be corrosion-resistant and designed for saltwater immersion.
- Heavy duty rub rails
- The vessel shall be capable of a cruising speed of at least 36 mph with a full load of fuel, 4 people on board and 500 pounds of scientific equipment on deck.
- The vessel should have built-in flotation
- Built-in fuel tanks with total capacity of 130 gallons (or greater), with in-line fuel filter that has replaceable elements.
- Built-in bilge pumps
- Twin O/B bracket
- Dive/swim platforms mounted to port and starboard of outboard motors mounting bracket with ladder
- Bow pulpit with anchor roller
- Anchor locker on bow

Power:	Twin Outboard Motors
Draft:	< 18" (hull)
Dry weight:	< 8,000
Official color	Grey or White with diagonal blue stripe

Cabin:

- Cabin, 7' long, sufficiently tall to allow crew to stand.(~5' x 7' x 6' 3")
- Hard top
- Walkways port & starboard around cabin, at gunnel height, handrails on edge of cabin roof
- Locking door with heavy duty latch for lock
- Windows on all 4 sides, opening on port and starboard side, to provide clear views of decks & 360 view of horizon; front windows (windshield) having windshield wipers on port and starboard sides; windows lockable from inside by cam-lock or other standard hardware device.
- Seating for pilot (starboard; swivel chair), navigator (port side; swivel chair),
- Pilot's station console to have sufficient room for engine controls & gauges (including, fuel gauge, motor-use hour meter, tachometer, volt meter gauge, power trim gauge, and motor tilt gauge), navigation aids (compass, GPS, fathometer), communications (VHF radio, cell phone; ceiling mounts), and small computer monitor on dash (navigation tracking).
- Bow compartment under foredeck configured for storage space
- Interior lights in cabin and in bow compartment

Decks:

- Durable decks with non-slip walking surfaces
- All outside decks shall be self-bailing (with scuppers) with a load of 2000 lbs (crew & gear)
- 3 cleats or more per side on top of gunwales, with at least 2 additional cleats at the stern-end of the aft deck for tying off towed equipment
- Hand rails on fore deck and on top edges of cabin
- Exterior light on aft deck, attached to cabin roof

2. Outboard Motors:

2 - 200 HP High Pressure Direct Injection, engines installed; Counter-rotating (25" shafts) with props
2 - batteries with heavy duty switches (Cole-Hearse type)
2 - Fuel filters water separating (Racor type)
Binnacle controls
Control cables (4)
Ignition harnesses (2)
Tachometers (2)
Voltage meters (2)
Trim & tilt gauges (2)
Hour meters (2)
Fuel Gauge
Flow scan fuel gauge
High temp and low oil warning buzzer

3. Trailer

- Heavy duty, sized for boat length & weight
- All materials and construction for salt water service. Frame may be marine grade aluminum, hot-dipped galvanized steel
- Torsion suspension
- Moveable axles, with Bearing-Buddy hubs, or proprietary equivalent bearing lube system
- Bronze or stainless-steel disk brakes
- Surge brakes, corrosion-proof & immersion grade, sized for anticipated load
- Hot-dipped, galvanized wheels & trailer-grade radial tires (incl. spare wheel, tire & mount)
- Heavy-duty tall side loading guides, roller guide system for hull
- 2-5/16" ball with SAE class IV coupler
- Heavy-duty 1500 lb capacity, swing-away tongue jack w/ caster wheel
- Winch

- Safety chain & hook
- Lighting & wiring package moved up placed on tall side loading guides
- Spare tire/rim mounted on trailer

4. **Accessories**:

- Stainless steel Grab rails on each side and center of wheelhouse
- Stainless steel bow rail
- Cleats 10" Bow, spring, stern
- Floodlights (2)~ 55 watt halogen 12VDC
- Spot light -12VDC ~ 100,000 cp beam
- Horn - 12VDC 107dB
- Compass 4"or 5" card
- Accessory panel using breakers
- Navigation lights and cockpit lights
- Automatic bilge pumps 2000 gph (2) 1 fwd & 1 aft
- 12 VDC receptacles (3)
- Heavy duty rub rail on sides
- Heavy duty rub rails on gunwales
- Full Transom
- Electric trim tabs (~ 12" x 12") (Lenco type)
- Hydraulic steering (no feed back)
- Raw water wash down system 12 VDC
- **[Optional]** 110V-AC power (2.5 KW), pure or modified sine-wave system for scientific electronics, computers, conditioned (UPS), powered from batteries through inverter, batteries charged from outboard motor or shore power (include shore power system)

5. **Documentation:**

The vessel shall be delivered with a documentation package consisting of, as a minimum, sets of:

Title for boat and trailer.
General Arrangement drawings
General Scantlings and Structural drawings
Owner's manuals for all builder-supplied accessories, motors, and trailer .
Electrical drawings for the 12 Vdc and 120 Vac distribution systems (if installed).

6. **Warranty:**

The builder shall guarantee that the hull, decks, and cabin structures will be free of structural defects for a period of five years after the date of final acceptance by EPA, and that all other components and accessories will be free of structural, mechanical, or electrical defects for a period of one year after the date of final acceptance by EPA.

7. Delivery

The delivery time shall not exceed 6 months after the award of the contract.

The boat shall be delivered to:

US Environmental Protection Agency
1 Sabine Island Dr.
Gulf Breeze, FL 32561
Attn. Jim Patrick 850-934-9242

LIST OF KNOWN POTENTIAL SOURCES

Big Bend Marine
3482 HWY 19 South
Perry, FL 32348

850-584-5977 office
850-584-2128 Fax

Boston Whaler Inc.
Commercial Products Division
4121 south US HWY 1
Edgewater, FL 32141
904-409-6431
781-878-4916 Fax
Contract number GS 07F 0011J
Effective through 9/30/03
Doug Nettles

Parker Marine
PO Box 2129
Beaufort, NC 28516
252-728-5621

Beaufort Boathouse Inc.
247 Robert Smalls Pkwy
Beaufort, South Carolina 29906
843-522-2040 Office
843-522-0885 Fax
Beaufortboat@islc.net

Lindsay Marine
2391 North Federal Hwy
Stuart, FL 34995
772-692-3080
772-692-3084 Fax
Lmarine1@bellsouth.net
Attn: Brian Lindsay

U. S. ENVIRONMENTAL PROTECTION AGENCY
Office of Research and Development
National Health and Environmental Effects Research Laboratory
Gulf Ecology Division
1 Sabine Island Drive
Gulf Breeze, FL 32561

Justification of need

GED requires a vessel for SAV Model Validation. Our goal in this study is to provide a scientific basis for developing nutrient criteria that would protect seagrass habitats from degradation or loss, and that would aid in restoration efforts. . The research approach will be to couple existing seagrass stress-response, physiological, and population models that will then be parameterized with field observations and experiments. A range of field observations and experiments will collect data to support model development.

A research vessel is required to support multi disciplinary investigations of coastal eutrophication in northern Gulf of Mexico estuaries. Processes currently under investigation or planned for the near future include: water circulation; hypoxia; nutrient input, fate and transport; plankton dynamics; benthic processes; food web status and dynamics. Field activities include or are proposed to include: water quality sampling; deployment and retrieval of instrumentation; deployment of plankton and otter-board trawl nets; field experimentation involving SCUBA diving.

A offshore vessel is required to collect quantities of gulf water. Maintenance of our current 4 strains of *Karenia brevis,*the causative agent of red tide in the Gulf of Mexico, requires particularly high salinity (32-34 ppt) seawater for adequate growth and toxin production. This high salinity water can only be obtained reliably approximately 3 to 5 miles offshore. Experiments currently underway on the effect of brevetoxin on oyster condition and reproductive success require in excess of 360L in a 24 week exposure period. Experiments are currently being planned for similar studies on shrimp and on differential tissue accumulation of toxin in oysters.